STORMWATER POLLUTION PREVENTION PLAN TEMPLATE
NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF WATER QUALITY
SFN 19388 (10/2013)

Stormwater Pollution Prevention Plan

For:

Project Name:	Black Eagle Estates
Site Location/Address:	Approx. 1,510' west of the intersection between Turnuey Ridge Road & 3rd Avenue NE
City:	Mandaree, ND
County:	McKenzie
Site Telephone Number: (if applicable)	

Owner(s):

Company or Organization:	West Segment Development Corporation
Contact Name:	Delvin Reeves
Mailing Address:	PO Box 637
City, State, Zip Code:	Mandaree, ND 58757
Telephone Number:	(701) 426-1680
Fax:	
E-mail:	delvinreeves@mhanation.com

SWPPP Preparation Date:

12/15/2014

NDPDES Permit Coverage Number:

Foreword:

All construction projects covered by the North Dakota Pollutant Discharge Elimination System General Permit associated with stormwater discharges from construction activity, NDR10-0000, shall prepare and implement a stormwater pollution prevention (SWPP) plan as part of the permit requirements. The SWPP plan and revisions are subject to review by the North Dakota Department of Health. The objectives of the plan are to identify potential sources of stormwater pollution from construction activity and to ensure practices are implemented to minimize the contribution of pollutants to stormwater runoff. Stormwater management measures developed under other regulatory programs (e.g., Spill Prevention, Control and Countermeasure requirements) can be included in the SWPP plan or incorporated by reference.

The SWPP plan may identify more than one permittee and may specify the responsibilities of each permittee by task, area, and/or timing. Permittees may coordinate and prepare more than one SWPP plan to accomplish this. However, in the event there is a requirement under the SWPP plan for which responsibility is ambiguous or is not included in the SWPP plan, each permittee shall be responsible for implementation of that requirement. Each permittee is also responsible for ensuring that its activities do not render another permittee's controls ineffective.

The SWPP plan is an enforceable document; the purpose of the plan is not for regulators to review but for owners and operators to implement.

The SWPP plan shall include the following information:

1. Site description
2. Operational controls
3. Erosion and sediment controls
4. Stormwater management
5. Maintenance
6. Inspections
7. Records location and retention
8. Plan review and revisions
9. Final stabilization
10. Construction stormwater general permit, NDR10-0000
11. Copy of the notice of intent
12. Coverage letter from the North Dakota Department of Health
13. Guidelines, specifications or manuals for selected best management practices

1. Site Description. The plan must include a description of the construction site and potential pollutant sources.

a. Project location. Please complete one of the selections.

☐ Street Address: _____ City: _____

Subdivision (if known): _____

☐ Township: _____ Range: _____

Section: _____ --- _____¼ _____¼ _____¼ ; or ABCD: _____

☒ Latitude: 47° 44' 20.04" N Longitude: 102° 40' 28.55" W

☒ General Location: Approx. 1,510' west of the intersection between Turnuey Ridge Road & 3rd Avenue NE

b. Describe the overall project and type of construction activity. Attach additional pages if needed and label 1-b.

A single family housing development was constructed. The development will be constructed in two separate phases. Phase I contains 30 lots and 30 homes and is located in the southwest portion of the project area. Phase II will contain approximately 30 lots and is slated for future development. Other site surfacings include parking areas, internal rural roads, and sidewalks. An access road connecting to Turnuey Ridge Road is the only entrance into the site. A 15' access tract contains an access road to the lagoons and is located west of Phase I. Due to the irregular and sloping land, land clearing comprised a majority of the construction. For this project, topsoil was stripped and stockpiled on site until site work was complete. Proposed grades were then set, followed by service work. Excess topsoil was removed from the site and disposed of. All paving commenced once grades were established. Final grading and seeding completed the project.

c. Estimated total area of the project and total area expected to be disturbed by excavation, grading, grubbing or other activities. Include the estimated total area of offsite support activities that will be covered by the construction general permit. This includes concrete or asphalt batch plants, equipment staging yards, material storage areas, excavated material disposal areas, and borrow areas not already covered by another stormwater permit.

Total area of project: Approximately 30 acres

Total area expected to be disturbed: Approximately 40 acres

d. Provide a proposed timetable of soil disturbing activities for major portions of the site (for example; excavation, grading, grubbing, building, temporary stabilization, final stabilization). A construction schedule may be used if available. Attach additional pages if needed and label 1-d.

Phase	Timetable
Earthwork/Set Grades	May 19, 2014 - July 2, 2014
Service Work	July 7, 2014 - August 29, 2014
Paving of Roads and Driveways	September 1, 2014 - September 19, 2014
Placement of Homes and Pads	September 29, 2014 - October 31, 2014
Final Stabilization/Clean up	October 22, 2014 - November 28, 2014

e. Describe the soil within the disturbed area(s). Attach additional pages if need and label 1-e. (Soil survey information may be found at websoilsurvey.nrcs.usda.gov/app/.)

The site soils consist primarily of Dogtooth-Janesburg-Cabba complex. This soil type is consistent with the Hydrologic Soil Group 'D'. The soil texture for this soil classification consists chiefly of clays that have a high shrink-swell potential. These soils are known to have a very slow infiltration rate (high runoff potential) when thoroughly wet. These soils are located to the north of the project area. The other major site soil is Zahl-Cabba-Maschetah complex. This soil type is consistent with the Hydrologic Soil Group 'C'. Group 'C' soils have a slow infiltration rate when thoroughly wet. Other soils representative of the site characteristics are Rhoades-Daglum complex and Williams-Zahl Loams. A soil map has been attached to the Appendix of this report.

f. Provide the drainage path runoff takes as it leaves the site. Include the municipal, county or state-operated storm sewer or drainage ditch, as well as the first named waterbody or wetland (if known) to which the site drains. Attach additional pages if need and label 1-f.

Also include whether or not the waterbody is listed in the most recent *North Dakota Integrated Section 305(b) Water Quality Assessment Report and Section 303(d) List of Water Needing Total Maximum Daily Loads* or if a total maximum daily load (TMDL) has been developed for the waterbody.

The Integrated Report and a list of waterbodies with a TMDL may be found at: www.ndhealth.gov/WQ/SW/Z2_TMDL/default.htm.

- If the waterbody is listed in the Integrated Report in the Section 303(d) List as impaired due to sedimentation/siltation, then distance to the waterbody must be included.
- If a TMDL allocation has been developed for the waterbody or overall watershed, then a list of the particular pollutants must be included and the SWPP Plan must be developed to satisfy Part I.B.5 of NDR10-0000. The pollutants of concern often are referenced in the title of the TMDL document.

For example: The site drains to the Bismarck storm sewer and discharges into a tributary of Hay Creek. Hay Creek is listed as impaired for sediment and is 1,000 feet from the site.

The site has an internal drainage system designed to force a majority of the site's stormwater southwest. This flows enters a stream that travels south to the west of Mandaree and continues approximately 80,000 ft before discharging into Lake Sakakawea. The northwest portion of the site, approximately 3 acres, drains northeast into Boggy Creek. Both watershed's confluence is the Missouri River. The receiving streams and creeks were not found on the most recent North Dakota Integrated Section 305(b) Water Quality Assessment Report and Section 303(d) List of Water Needing Total Maximum Daily Loads. Maps have been attached to the Appendix of this report.

g. Provide a site map showing the following items. Please note: Items 1 through 10 all must be shown on the site map. Label as 1-g.
1) Drainage patterns, including flow direction, dividing lines, existing grade and final grade
2) Construction site boundaries
3) Areas of soil disturbance
4) Location of major structural controls identified in this plan

5) Location of major nonstructural controls identified in this plan
6) Location of areas that will be stabilized
7) Surface waters, including an aerial extent of wetland acreage
8) Locations where stormwater is discharged to surface waters
9) Locations where stormwater enters municipal storm sewer systems
10) If part of the project, additional site maps of:
    - Off-site concrete/asphalt batch plants
    - Equipment staging areas
    - Borrow sites
    - Offsite material disposal sites

2. Operational Controls. The plan must describe the best management practices (BMPs) used in day-to-day operations on the project site that reduce the contribution of pollutants in stormwater runoff.

a. **SWPP plan contact.** The SWPP plan contact must be an individual who is knowledgeble and experienced in the application of erosion and sediment control BMPs who will oversee the implementation of the SWPP plan and the installation, inspection and maintenance of the erosion and sediment control BMPs before and during construction. The contact may be identified by name or title.

SWPPP contact: Bruce Lott Phone: (513) 535-4006

Title: Project Manager

b. **Chain of responsibility.** A chain of responsibility must be developed by the owner with all operators on site to ensure the SWPP plan will be implemented and remains in effect until (1) the project is complete, (2) final stabilization has been achieved, and (3) a notice of termination (NOT) has been submitted to the department.

First, the topsoil was stripped along with the installation of erosion control devices. Service work then followed being cautious to maintain erosion control devices. When the grades were set, all paving activities started. Final grading and seeding completed Phase I. The project manager was responsible for the maintenance of erosion control devices during construction. The owner will be responsible for the maintenance of erosion control devices until final stabilization.

c. **Good housekeeping.** Describe good housekeeping practices used to maintain a clean and orderly project.

Properly handle construction debris and waste materials. The appropriate containers for debris and waste material must be provided until disposal. Litter and debris must be picked up regularly to reduce the chance of being carried away by wind or water. Collected material must be taken to the appropriate facility for disposal or recycling.

Liquid or soluble material (i.e., oil, fuel, paint and hazardous substances) must be stored properly to prevent spills, leaks or discharges off-site. Restricted access to storage areas must be provided to prevent vandalism. Storage and disposal of hazardous waste must be in compliance with applicable regulations.

1) Describe how the following items will be properly handled to minimize exposure to stormwater and not be carried offsite by wind or water. Attach additional pages if needed and label 2-c-1.
    - Litter
    - Debris
    - Chemicals
    - Parts

Litter should have been picked up and disposed of by the contractor as noticed on-site. Any debris was trucked to a local landfill or diposed of properly. A fuel truck may have been brought on-site to fuel construction equipment rather than storing fuel on site. If equipment was damaged, repairs were performed with containment of fluids in mind. No repairs on site were done near

drainage ways. Spill mats were utilized and disposed of according to state regulations when repairs were done on site. Water and sanitary sewer materials were storaged away from drainage ways. Bedding materials were brought on site and placed as needed. Concrete washout areas were utilized in different locations away from drainage ways. Any excess materials were hauled off site.

2) Describe how off-site accumulations of tracked sediment caused by vehicles and equipment leaving the project will be reduced and cleaned up. Attach additional pages if needed and label 2-c-2.

   Note: The general permit NDR10-0000 requires you to removed accumulated sediment tracked onto off-site paved surfaces within 24 hours or within a shorter time period specified by local authorities or the department. Be sure to check with local authorities, most specify either the end of the day or within 24 hours. You also should consider whether public safety will be an issue.

Access points were limited to a specific location at the intersection of Turnuey Ridge Road and 3rd Avenue NE to prevent outward migration of soils outside of the construction areas. Construction equipment remained on site until work was complete. Sediments were recovered by means of hand shovels, brooms and sweepers.

3) Describe how dust generation will be reduced and how off-site accumulations will be cleaned up. Attach additional pages if needed and label 2-c-3.

Watering was used seldom during stripping of topsoil, excavation, utility and sewer work, and setting of the pavement to control dust. Upon completion of said work, the earthwork was seeded to further prevent blowing dust and retain moisture.

d. **Preventative maintenance.** Describe what preventative maintenance practices are used, including routine inspections and maintenance, to ensure the proper operation of the following. Attach additional pages if needed and label 2-d.

- Stormwater management devices (for example: oil-water separators, catch basins, fiber rolls, etc.)

Prior to construction, there were no stormwater facilities within the site. Inlets capture storwater within the center of the site and discharge to the southwest. Silt fence was utilized around inlets to prevent sediment from entering the storm sewer. Straw wattles were intended to be placed on downward slopes to slow stormwater runoff, capture sediment until grass vegetation is established, and help retain the grass seed to promote growth. Inspections should have been performed once every two weeks or after a rainfall event of 0.5 inches or more to verify the BMP integrity.

- (**Preventative maintenance-continued**) Equipment used on-site, such as a pre-startup inspection

Contractors were responsible for maintenance of equipment. Equipment should have been in proper working condition before it was brought on site. Operators should have checked equipment fluid levels prior to start up each day. A visual inspection of hoses should have also been completed.

e. **Spill prevention and response procedures.** Describe spill prevention and response procedures used in areas where spills could occur. Bulk storage of petroleum products and other chemicals must have adequate leak and spill protection to prevent spilled material from entering waters of the state or storm sewer systems or from draining onto adjacent property.

Include, where appropriate:

- Specific handling procedures.
- Storage requirements.
- Spill containment procedures.
- Spill cleanup procedures.

Reportable spills are those that:

- Threaten or are in a position to threaten waters of the state, such as surface or ground water.
- Cause immediate danger to human health or safety.
- Cause harm or threaten to harm wildlife or aquatic life.
- Are releases of oil or hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act (see 40 CFR 110.10 and CFR 117.21) or Section 102 of CERCLA (see 40 CFR 302.4).

Note: CFR stands for *Code of Federal Regulations*, and CERCLA stands for *Comprehensive Environmental Response, Compensation, and Liability Act*.

Spill Reporting

Report any spill that may seriously endanger health or the environment **as soon as possible**, but no later than 24 hours from the time you became aware of the spill. The report must be made to EPA-Region 8, Emergency Response Branch, at 800.424.8802 and the state of North Dakota, Division of Homeland Security, at 800.472.2121.

Some releases may require immediate response by trained emergency personnel. This may be coordinated through the Department of Health, Department of Emergency Services and any other state or local emergency response agencies that may be needed. **If there is any question as to proper response, call the Department of Health at 701.328.5210 or the North Dakota hazardous materials emergency assistance and spill reporting number (800.472.2121) and provide all relevant information about the incident.**

North Dakota Department of Health:

Division of Water Quality	701.328.5210
Division of Waste Management	701.328.5166
Division of Air Quality	701.328.5188
Division of Municipal Facilities	701.328.5211

North Dakota hazardous materials emergency assistance and spill reporting:
800.472.2121 (24-hour hotline)

Nonemergency releases may be reported by filling out the online Environmental Incident Report Form at www.ndhealth.gov/WQ/GW/spills.htm.

Material/Chemical	Quantity	Handling Procedures	Storage Requirements	Spill Containment Procedures	Spill Clean-up Procedures

Attach additional pages if needed

f. **Employee training.** Describe how personnel are informed about their responsibility in implementing the practices and controls in the plan. Employee training can include spill response procedures, good housekeeping practices, and erosion and sediment control practices. Note: Employee training must be provided at least annually, as new employees are hired or as necessary to ensure compliance with the plan and the general permit, NDR10-0000. Attach additional pages if needed and label 2-f.

The contractor's employees should have been trained on standards and spill response procedures. In the event of spills, employees were directed to contact the company owner for direction on additional containment procedures.

g. **Concrete wash water, grindings and slurry.** Concrete wash water may not be discharged to any water of the state or any storm sewer system or allowed to drain onto adjacent properties. Disposal must be limited to a defined area or an area designated for cement washout. The area must be sufficient to contain the wash water and residual cement.

Please note that as the project progresses, the wash out area will probably move. Be sure to keep the current position of the wash out area up-to-date on the site map.

Describe what practices will be used to prevent concrete wash water, grindings and slurry from entering waters of the state and storm sewer systems, or draining onto adjacent property. Attach additional pages if needed and label 2-g.

Concrete washout areas were located away from any conveyance paths. The concrete washout area was set up to be dug into the ground and was emptied regularly and disposed of off site.

h. **Dewatering and basin draining operations.** These operations must not adversely affect receiving waters or downstream landowners. The operation should be inspected daily and a record should be maintained. The following conditions apply to dewatering activities covered by the construction general permit:

- Dewatering is limited to stormwater and groundwater that may collect on site, and the following allowable non-stormwater sources: fire-fighting, fire hydrant flushing, potable water line flushing, infrequent building and equipment wash down without detergents, uncontaminated foundation drains, springs, lawn watering and air conditioning condensate.

  Note: You are allowed to discharge the non-stormwater discharges sources only if you describe what measures will be used to minimize their impact to water quality.

  A temporary dewatering permit, NDG07-0000, is required for other sources such as hydrostatic testing, contaminated groundwater or surface water. Information about the temporary dewatering permit may be found at: www.ndhealth.gov/WQ/Dewatering/DewateringHome.htm. Discharging wastewater from processing operations or sanitary facilities is not authorized by the construction general permit, NDR10-0000.

- The operation must not lead to sediment deposits within storm sewers, ditches and surface waters. The operation must not cause or potentially cause a visible plume in a surface water.

Describe how dewatering operation will be operated to minimize the release of sediment and amount of erosion caused by the discharge.

N/A

3. Erosion and Sediment Controls. An erosion and sediment control plan must be developed for the project. The plan must identify the appropriate control measures and when they will be implemented during each major phase of the project (e.g., clearing, grading, and building phases).

The basic requirements of an erosion and sediment control plan are:

a. Sediment basins – or an appropriate combination of equivalent sediment controls such as smaller sediment basins, and/or sediment traps, silt fences, fiber logs, vegetative buffer strips, berms, etc. – are required for all down-slope boundaries of the disturbance area and for those side-slope boundaries as may be appropriate for site conditions.

b. Temporary erosion protection (such as cover crop planting or mulching) or permanent cover must be provided where activities have been completed or temporarily ceased. For areas with a continuous positive slope within 200 lineal feet of a surface water, this must be accomplished within 21 days. These areas include graded slopes, pond embankments, ditches, berms and soil stockpiles.

   A general rule of thumb is that seed germination will occur when the soil temperature is above 50°F. Soil temperature information may be found at ndawn.ndsu.nodak.edu.

c. All control measures must be properly selected, installed and maintained in accordance with the manufacturer's specifications and good engineering practices. Include with this plan a copy of the use or installation directions for measures that are used during the project. If periodic inspections or other information indicates a control has been used inappropriately, or incorrectly, it must be replaced or modified for the situation. You may deviate from the manufacturer's specifications and erosion and sediment control guidelines below if you provide justification for the deviation and document the rationale for the deviation in your SWPP plan.

d. If sediment escapes from the site, off-site accumulations of sediment must be removed in a manner and at a frequency sufficient to minimize off-site impacts. The plan must be modified to prevent further sediment deposition off-site.

e. Stormwater controls are expected to withstand and function properly up to a two-year, 24-hour precipitation event. Visible erosion and/or off-site sediment deposits should be minimal. A two-year, 24 hour rain event in North Dakota ranges from 1.9 inches in the west to 2.3 inches in the east.

f. If the project discharges to a waterbody that has a TMDL allocation for sediment, suspended solids or turbidity, this plan must be consistent with the requirements of the TMDL. If the TMDL requires certain practices be used to meet the waste load allocation (WLA), then the practices must be included in this plan.

The erosion and sediment control plan must conform to the guidelines outlined in Appendix 1 of NDR10-0000 for designing, implementing and maintaining effective erosion and sediment controls. The following questions break down the requirements of Appendix 1.

☐ Yes ☒ No	1. Where practical, temporary or permanent sediment basins must be provided when 10 or more acres of disturbed area drains to a common location. The basins must be provided prior to runoff leaving the site or entering surface waters. The use of sediment basins is encouraged, but not required, in areas with steep slopes or highly erodible soils even if less than 10 acres drains to one area. Is the use of sediment basins practical for the project? If no, skip to question #10. Things to consider include public safety, soil type, slope and available area.
☐ Yes ☐ No	2. Where appropriate, are temporary sediment basins installed in areas with steep slopes or highly erodible soils?
☐ Yes ☐ No	3. Are all basins sized or designed to meet one of the following guidelines? • Basins must be sized to provide 3,600 cubic feet of storage for every acre of disturbed area draining to the basin; or • Basins must be designed to provide storage for a two-year, 24-hour storm event plus more than 1,800 cubic feet of storage from each disturbed acre that drains to the basin.
☐ Yes ☐ No	4. Are basin outlets designed to avoid short-circuiting? Short-circuiting usually occurs when the outlet is near the inlet. This causes water to exit the basin immediately upon entering and little treatment is achieved.
☐ Yes ☐ No	5. Are basin outlets designed to avoid the discharge of floating debris?
☐ Yes ☐ No	6. Are the basins designed to allow complete drawdown for maintenance activities? Examples of

	drawdown devices include perforated riser pipes, pumps, skimmers or other means.
☐ Yes ☐ No	7. Is the drawdown designed to release the storage volume in a 24-hour or longer period?
☐ Yes ☐ No	8. Does the basin have a stabilized emergency overflow to prevent failure of pond integrity?
☐ Yes ☐ No	9. Does the basin outlet have an energy dissipater?
☒ Yes ☐ No	10. If temporary sediment basins are not practical in areas where 10 or more acres of disturbed area drains to a common location, then a combination of erosion and/or sediment controls with equivalent storage must be used for all down-slope construction boundaries and side-slope boundaries as appropriate. Examples of additional controls include smaller sediment basins, sediment traps, silt fences, vegetative buffer strips, etc. Have erosion and sediment controls been provided that have the same sediment-control capabilities as the sediment basins they replaced?
☒ Yes ☐ No	11. Has temporary erosion protection been provided for exposed soil areas where activities have been completed or will temporarily cease?
☒ Yes ☐ No	12. Has permanent cover been provided for exposed soil areas where activities have been completed or will temporarily cease?
☐ Yes ☒ No	13. For areas with a continuous positive slope within 200 lineal feet of a surface water, does the plan address how temporary erosion protection or permanent cover will be applied within 21 days of completing or ceasing earthmoving activities in these areas (pond embankments, ditches, berms, soil stockpiles)? Temporary stockpiles without significant silt, clay or organic components, such as clean aggregate stockpiles, demolition concrete stockpiles, and sand stockpiles, are exempt.
☒ Yes ☐ No ☒ Yes ☐ No	14. Do temporary soil stockpiles have effective sediment controls? Does the plan address how temporary soil stockpiles will not be placed in surface waters, stormwater conveyance systems, curb and gutter systems, conduits or ditches?
☐ Yes ☒ No ☐ Yes ☐ No ☐ Yes ☐ No	15. Are there any temporary or permanent drainage ditches that drain water from the construction site or divert water around the site? Does the plan address how the normal wetted perimeter of these ditches will be stabilized within 200 lineal feet of the property edge or point of discharge to a surface water? Does the plan address how the normal wetted perimeter will be stabilized within 24 hours of connecting to a surface water?
☒ Yes ☐ No	16. Does the plan address how pipe outlets will be provided with temporary or permanent energy dissipation within 24 hours of connecting to a surface water?
☐ Yes ☐ No	17. Where applicable, are splash pads and/or downspout extensions provided for roof drains to prevent erosion?
☐ Yes ☒ No	18. For slopes with a grade of 3:1 or steeper, is the slope length broken up every 75 feet?
☒ Yes ☐ No	19. Do temporary or permanent drainage ditches and sediment basins that are part of a treatment system have appropriate sediment controls?
☒ Yes ☐ No	20. Are all storm drain inlets within the project limits and in the immediate vicinity of the site protected?

	This includes inlets affected by sediment tracked from the site. Note: Inlet protection is a last line of defense. Additional sediment and erosion control practices must be used on-site. Inlet protection must conform to local ordinances or regulations. Maintenance and cleaning of inlet protection must be performed in a timely manner. Inlet protection may be removed for a particular inlet if a specific concern, such as street flooding/freezing or snow removal, has been identified and documented in the SWPP plan. In these situations, additional erosion and sediment control practices must be used in place of the lost inlet protection.
☒ Yes ☐ No	21. Do inlet protection devices provide adequate drainage to prevent excessive flooding?
☐ Yes ☐ No	22. Do vegetative buffers have a minimum width of 25 feet for every 125 feet of disturbed area that drains to the buffer? For each additional 5 feet of disturbance, an additional 1 foot of buffer must be added. The buffer should have a slope of 5 percent or less, and the area draining to the buffer should have a slope of 6 percent or less. Note: In some instances, a minimum width of 25 feet may not be necessary based on past experience with buffers. In those cases, a short explanation about what your experience has shown should be included in this plan.
☒ Yes ☐ No	23. Are concentrated flows being minimized throughout the vegetative buffer?
☐ Yes ☒ No	24. Do vegetative buffers consist of dense, grassy vegetation? Dense, grassy vegetation is 3 to 12 inches tall with uniform coverage over 90 percent of the buffer. No more than 10 percent of the buffer may consist of woody vegetation.

4. Stormwater Management. The plan must identify what permanent practices will be used to control pollutants in stormwater discharges once construction is complete. This refers to post-construction controls like permanent infiltration devices or low-impact development practices. This does not refer to devices used to stabilize the site as a result of construction activity, such as silt fence or erosion control blanket, so this section may not apply to all projects.

Maintenance of on-site stormwater management features is your responsibilty until a notice of termination has been submitted or the feature is accepted by the party responsible for long-term maintenance (e.g., a municipality accepts a stormwater pond built during the project). In the site map identify:

a. Stormwater ponds; flow reduction practices that use open vegetated swales and natural depressions; infilitration of on-site runoff; and sequential systems that combine several practices.

b. Velocity / energy dissipation devices placed at discharge locations (e.g., riprap) and appropriate erosion protection for outfall channels and ditches (e.g., hard armor or soft armor practices).

5. Maintenance. All erosion and sediment control (ESC) measures and other protective measures identified in the plan must be maintained in effective operating condition. The plan must indicate the appropriate maintenance or cleanout interval for selected erosion and sediment controls. Attach additional pages if needed and label 5.

If site inspections identify BMPs that are not operating effectively, maintenance must be arranged and accomplished as soon as practicable.

When describing the maintenance and cleanout frequency of selected measures, try not to use vague terms like "as needed." Instead describe what is meant by "as needed," such as when one-third full or at the end of each work day.

ESC Measure	Maintenance Frequency	Cleanout Frequency
Silt Fence	Once a week or after rainfall event	After rainfall event or if 1/3 the berm height
Straw Wattles	Once a week or after rainfall event	After rainfall event or if 1/2 the berm height
Concrete Washout Area	Once every three weeks	When washout area is 1/2 full

Maintenance Considerations:

a. All erosion prevention and sediment control practices must be inspected to ensure integrity and effectiveness. All nonfunctional practices must be repaired, replaced or supplemented with functional practices.

b. At a minimum, you must investigate and comply with the following maintenance requirements:

- All control devices that function similarly to silt fence or fiber rolls must be repaired, replaced or supplemented with effective controls when they become nonfunctional or the sediment reaches one-third the height of the device. These repairs must be made within 24 hours of discovery or as soon as field conditions allow access.

- Sediment that has collected within temporary or permanent sedimentation basins must be removed when one-half of the sediment storage volume has been reached. Drainage and removal must be completed within 72 hours of discovery or as soon as field conditions allow access.

c. All sediment deltas and deposits must be removed from surface waters, drainage ways, catch basins and other drainage systems. All areas where sediment removal resulted in exposed soil must be restabilized. The removal and stabilization must take place immediately, but no more than seven (7) days after the discovery unless precluded by legal, regulatory or physical access constraints. All reasonable efforts must be used to obtain access. Once access is obtained, removal and stabilization must take place immediately, but no more than seven (7) days later. You are responsible for contacting all of the appropriate authorities and receiving the applicable permits prior to conducting any work.

d. Accumulations of tracked and deposited sediment must be removed from off-site paved surfaces within 24 hours or sooner if required. Sediment tracking must be minimized by the appropriate management practice, like a dedicated site exit with an aggregate surface or designated off-site parking area. You are responsible for street sweeping and/or scraping if your practices are not adequate to prevent sediment from being tracked from the site.

e. Off-site accumulations of sediment must be removed in the manner and frequency sufficient to minimize off-site impacts; for example, fugitive sediment in the street could be washed into the storm sewer by the next rain event and/or pose a safety hazard to users of public streets.

f. If a vegetative buffer is silt covered, contains rills, or is otherwise rendered ineffective, other control measures must be implemented. Any eroded areas have to be repaired and stabilized.

6. Inspections. Site inspections must be conducted to monitor the condition of stormwater discharge outlets and the effectiveness of erosion and sediment controls and other best management practices. Personnel conducting inspections must be familiar with the permit conditions and the proper installation and operation of erosion and sediment control measures. At a minimum, inspections must be performed and recorded once every 14 calendar days and within 24 hours of a 0.50-inch or more rain event. You may use a rain gauge or the nearest National Weather Service precipitation gauge station; each must be within 5 miles of the project. Inspection frequency may be reduced based on site conditions. Refer to part III.A of the construction general permit for more information.

All erosion and sediment control measures **identified in the plan** must be inspected to ensure they are operating correctly and in serviceable condition.

Surface waters, drainage ditches and conveyance systems must be inspected for sediment deposits.

Exit points from the construction site (onto paved surfaces) must be inspected for sediment being tracked by vehicles or equipment.

Vegetative buffers must be inspected for the proper distribution of flows, sediment accumulation and signs of rill formation.

Erosion and sediment controls found in need of maintenance between inspections need to be repaired or supplemented with appropriate measures as soon as possible.

Discharge outlets from material storage areas, vehicle maintenance areas and permanent stormwater control measures must be inspected. Look for evidence of, or the potential for, pollutants entering a drainage system. The plan must be revised if any deficiencies are noted.

a. Some erosion and sediment control measures may require more frequent inspections based on location or as a result of a recurring maintenance issue. The measure, location and inspection frequency should be outlined below:

ESC Measure	Location	Inspection Frequency
Silt Fence	As indicated on the attached map	After rainfall event or if 1/3 the berm height
Straw Wattles	As indicated on the attached map	After rainfall event or if 1/2 the berm height

b. Location of rain gauge being used: Local Radio

c. In some instances, more than one inspector may be responsible for reviewing different areas of the site, or there may be different inspectors involved with different phases.

Inspector(s)	Area of Inspection	Construction Phase of Inspection	Start Date	End Date
David Lott	All	All	May 19, 2014	Present
Bruce Lott	All	All	May 19, 2014	Present

e. All inspections and maintenance activity must be recorded in writing. Records of each inspection and maintenance activity shall include:
   1) The date and time of the inspection.
   2) The name of the person(s) conducting the inspection.
   3) The findings of the inspection, including recommendations for corrective actions.
   4) Any corrective actions taken (including dates, times and party completing the maintenance activity).
   5) The date and amount of all rainfall events greater than 0.50 inches in 24 hours.
   6) Documentation that the SWPP plan was amended when substantial changes were made to erosion and sediment controls or other best management practices.

7. Records Location and Retention.

a. The following documents must be kept in a field office, trailer, shed or vehicle that is on-site during normal working hours:
   1) A completed and signed copy of the notice of intent
   2) The permit coverage letter from the North Dakota Department of Health
   3) The stormwater pollution prevention plan
   4) Site inspection records
   5) A copy of the North Dakota Pollutant Discharge Elimination System General Permit associated with stormwater discharges from construction activity, NDR10-0000

b. If a reasonable on-site location is not available, then the documents may be retained at a readily available alternative location, preferably with the SWPP plan contact. If the site is inactive, then the documents may be stored at a local office.

c. All records and information must be kept for at least three years or longer if requested by the North Dakota Department of Health or United States Environmental Protection Agency.

8. Plan Review and Revisions.

a. The plan must be signed in accordance with Part IV-E of NDR10-0000.

b. The plan must be made available, upon request, to the North Dakota Department of Health, United States Environmental Protection Agency, or operator of the local municipal separate storm sewer system.

c. The plan must be amended whenever there is a change in design, construction, operation or maintenance that could have a significant effect on the potential for the discharge of pollutants to the waters of the state. It also must be amended if it is found to be ineffective in controlling pollutants present in stormwater.

SWPPP Revision Documentation

Item Revised	Revision Made	Date	Initials

9. Final Stabilization.

Final stabilization means that:

a. All soil-disturbing activities at the site have been completed and a uniform perennial vegetative cover with a density of 70 percent of the native cover for unpaved areas and areas not covered by permanent structures, or equivalent permanent stabilization measures (such as the use of riprap, gabions or geotextiles) has been achieved.

b. For areas with an average annual rainfall of less than 20 inches only, all soil-disturbing activities at the site have been completed and temproary erosion control measures (e.g., degradable rolled erosion control product) are selected, designed and installed, along with an appropriate seed base to provide erosion control for at least three years and achieve 70 percent vegetative coverage within three years without active maintenance.

c. For soil-disturbing activities on land used for agricultural purposes, final stabilization may be accomplished by returning the disturbed land to its pre-disturbance agricultural use. Areas disturbed that were not previously used for agricultural activities, such as buffer strips immediately adjacent to waters of the state, and areas that are not being returned to their pre-disturbance agricultural use must meet the final stabilization criteria in (a) or (b) above.

Final stabilization has been achieved when one of the criteria above has been met and:

a. All drainage ditches constructed to drain water from the site following construction have been stabilized to preclude erosion.

b. All temporary, synthetic and structural erosion and sediment controls have been removed.

c. Sediment has been removed from all stormwater conveyances and basins used for permanent water quality management. Removed sediment must be stabilized to prevent subsequent erosion in the future.

Final stabilization also can be achieved when a new permittee has assumed control of the site.

In the case of residential construction, final stabilization is achieved when erosion protection and down-gradient perimeter controls for individual lots have been installed and the residence has been transferred to the homeowner. In addition, a "homeowner fact sheet" must be given to the homeowner to inform them of the need for, and benenfit of, stabilizing their property. You also must demonstrate that the homeowner received the fact sheet.

The individual(s) described below is(are) responsible for the following portion(s) of the Stormwater Pollution Prevention Plan:

Andrew Seeberg	Bartlett & West, Inc.	Engineer
Name	Company	Title

Compilation of plan on behalf of the owner
SWPP Plan Responsiblity

Bruce Lott	Panther Devel. Investm., LLC	Project Manager
Name	Company	Title

Certify that plan described herein is accurate and true
SWPP Plan Responsiblity

Delvin Reeves	West Segment Dev. Corp.	Owner
Name	Company	Title

Examine and be familiar with the information described herein
SWPP Plan Responsiblity

Name	Company	Title

SWPP Plan Responsiblity

Name	Company	Title

SWPP Plan Responsiblity

Attach additional pages if needed.

CERTIFICATION

Certification Instructions:

The stormwater pollution prevention plan (SWPPP) must be signed by a responsible corporate officer, a general partner, or a principal executive officer or ranking elected official.

The SWPPP may be signed by a duly authorized representative of the individual described above if:

- The authorization is made in writing by the person described above and submitted to the North Dakota Department of Health; and

- The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the plant manager, the superintendent, a position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters.

If the authorization is no longer accurate for any reason, a new authorization satisfying the above requirements must be submitted to the Department of Health prior to or together with any reports, information or applications signed by the authorized representative.

Certification

I certify under penalty of law that I have personally examined and am familiar with the information submitted herein. Based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Name Bruce Lott Title Project Manager

Signature _____ Date _____

Appendix

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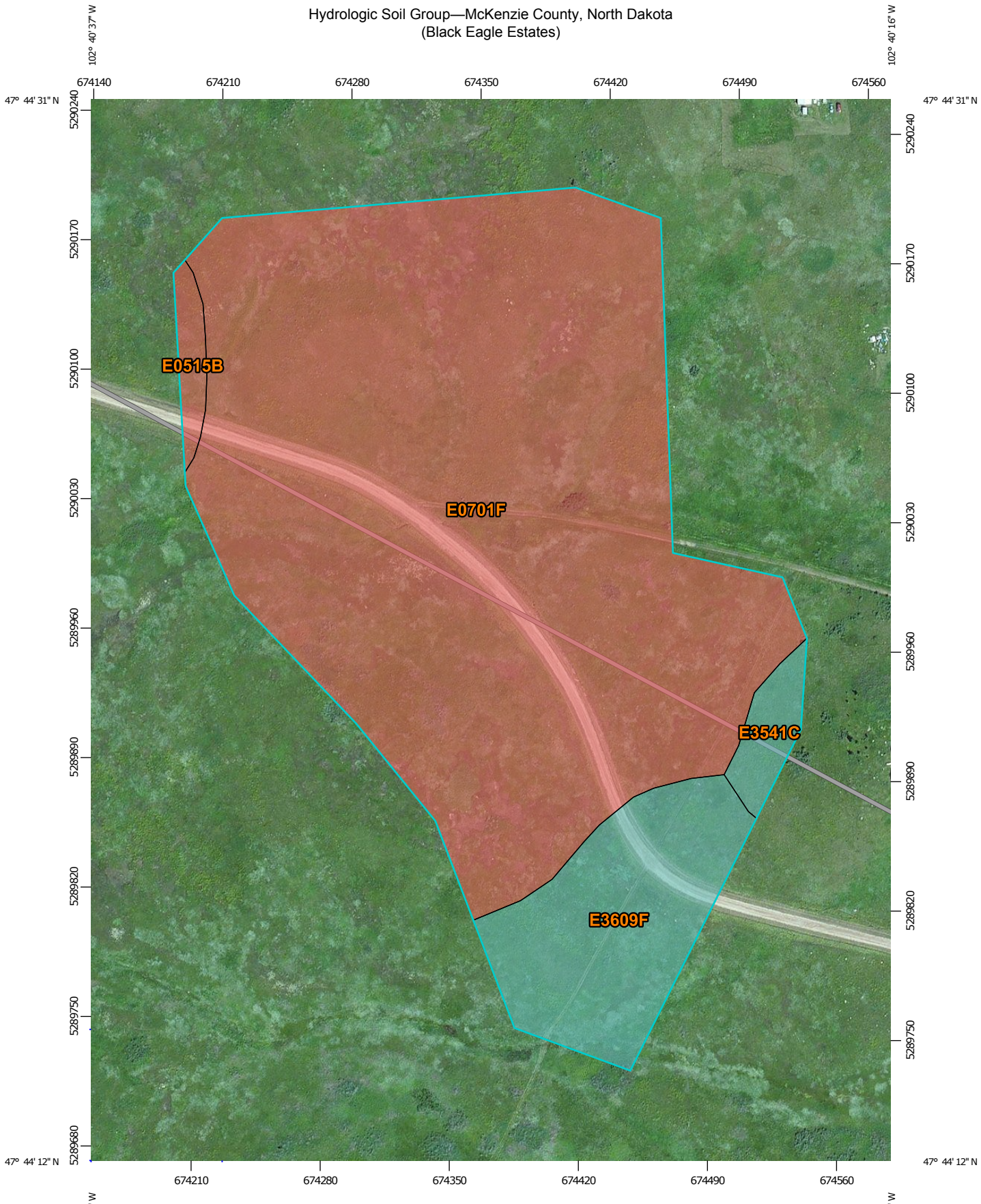
Hydrologic Soil Group—McKenzie County, North Dakota
(Black Eagle Estates)



Map Scale: 1:2,790 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 40 80 160 240

Feet: 0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: McKenzie County, North Dakota
Survey Area Data: Version 17, Sep 19, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 23, 2011—Jul 30, 2011

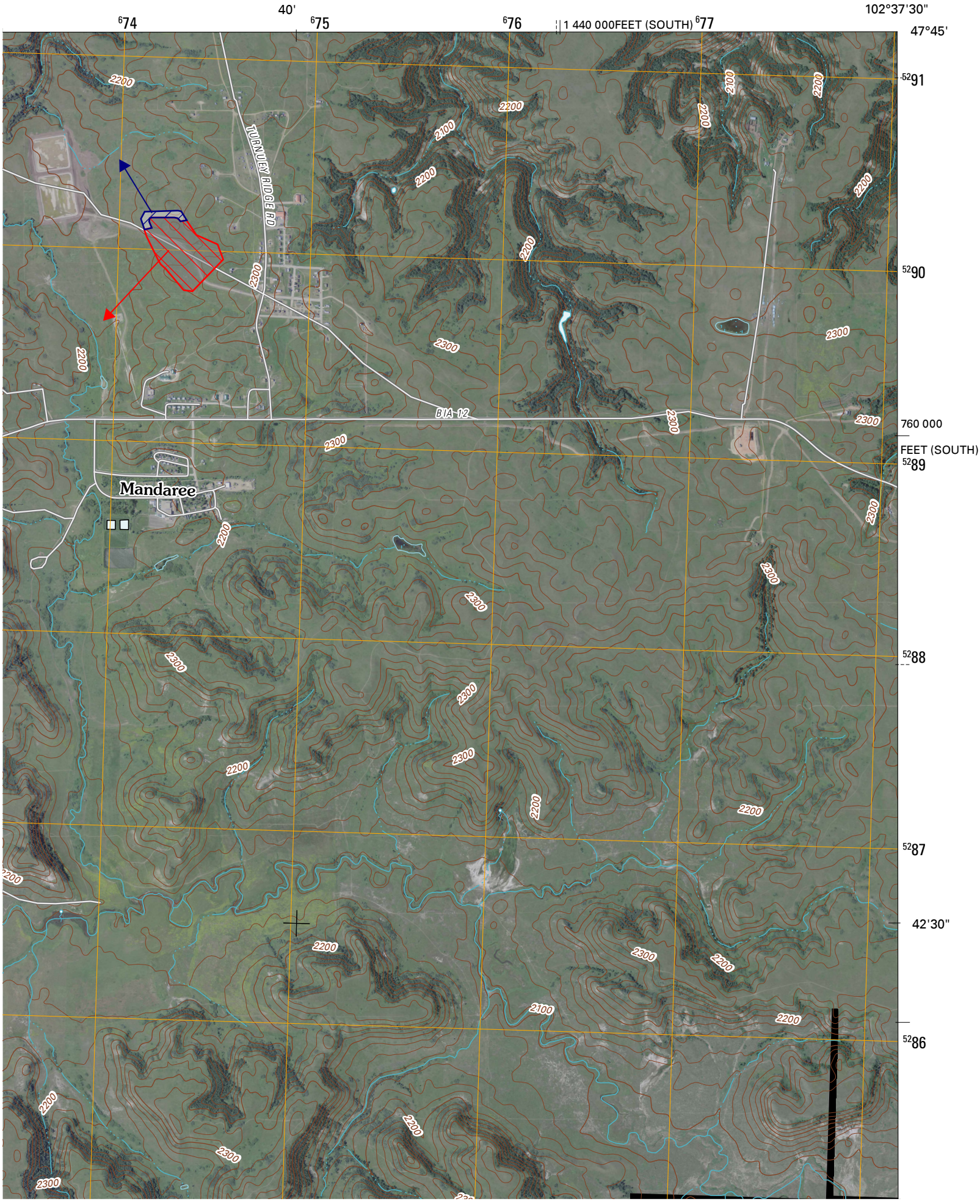
The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Hydrologic Soil Group— Summary by Map Unit — McKenzie County, North Dakota (ND053)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
E0515B	Rhoades-Daglum complex, 0 to 6 percent slopes	D	0.3	1.4%
E0701F	Dogtooth-Janesburg-Cabba complex, 6 to 35 percent slopes	D	20.8	83.4%
E3541C	Williams-Zahl loams, 6 to 9 percent slopes	C	0.5	2.1%
E3609F	Zahl-Cabba-Maschetah complex, 6 to 70 percent slopes	C	3.3	13.1%
Totals for Area of Interest			**24.9**	**100.0%**

ional Map
Topo

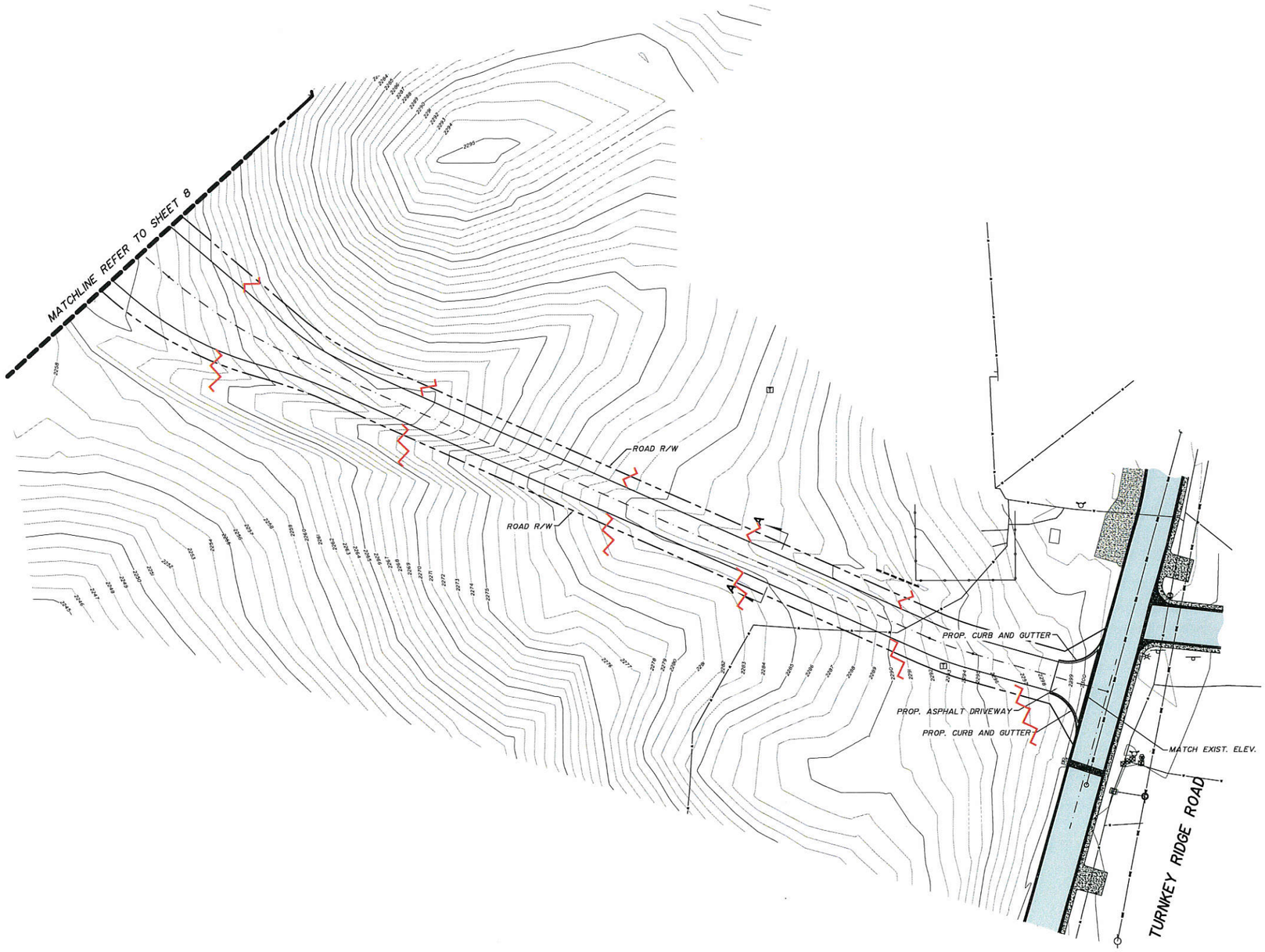
MANDAREE QUADRANGLE
NORTH DAKOTA
7.5-MINUTE SERIES



LEGEND

STRAW WATTLE

SILT FENCE



NORTH

0 50 100

Feet

1" = 50'

NO.	DATE	BY	REVISION	NO.	DATE	BY	REVISION

Designed by: G.H. Date: 5/2013

Drawn by: G.H. Date: 5/2013

Checked by: C.J.B. Date: 5/2013

development consulting group

planning • engineering • transportation
construction administration
12855 SW 132 Street, Suite 206
Miami, Florida 33186
Phone: (305) 253-1970
Fax: (305) 253-0897
Authorization No. EB-26343

Engineer of Record:

Registered Engineer Number:

Date: 08/07/2013

DRAINAGE SYSTEM AND GRADING PLAN

BLACK EAGLE STATES

PANTHER DEVELOPMENT INVESTMENTS, LLC

Project Number: 201307

Sheet Number: 7

LEGEND

STRAW WATTLE

SILT FENCE

NORTH

0 50 100

Feet

1" = 50'

EX. TOPOGRAPHIC CONTOUR ELEVATION (TYP)

MATCHLINE REFER TO SHEET 9

MATCHLINE REFER TO SHEET 7

PROPERTY LINE

PHASE TWO

PHASE ONE

LOT LINE (TYP.)

SWALE ℄

OPEN SPACE AREA

PROP. 10' UTILITY EASEMENT (TYP.)

PROP. 225'-24" RCP AT 0.30%

PROP. 43'-24" RCP AT 0.30%

PROP. 181'-24" RCP AT 2.94%

PROP. 56'-24" RCP AT 0.75%

PROP. 42'-24" RCP AT 0.30%

PROP. 175'-24" RCP AT 0.68%

PROP. 139'-24" RCP AT 1.95%

PROP. 84'-24" RCP AT 0.30%

Storm Sewer Not Constructed

F.P.E.= 2231.55 F.F.E.= 2232.55

F.P.E.= 2231.90 F.F.E.= 2232.90

F.P.E.= 2233.17 F.F.E.= 2234.17

F.P.E.= 2233.37 F.F.E.= 2234.37

F.P.E.= 2235.20 F.F.E.= 2236.20

F.P.E.= 2236.65 F.F.E.= 2247.65

F.P.E.= 2237.00 F.F.E.= 2238.00

F.P.E.= 2238.77 F.F.E.= 2239.77

F.P.E.= 2239.10 F.F.E.= 2240.10

F.P.E.= 2240.80 F.F.E.= 2241.80

F.P.E.= 2242.90 F.F.E.= 2243.90

F.P.E.= 2242.18 F.F.E.= 2243.18

F.P.E.= 2243.16 F.F.E.= 2244.16

F.P.E.= 2243.42 F.F.E.= 2244.42

F.P.E.= 2243.45 F.F.E.= 2244.45

F.P.E.= 2244.96 F.F.E.= 2245.96

F.P.E.= 2245.02 F.F.E.= 2246.02

F.P.E.= 2246.22 F.F.E.= 2247.22

F.P.E.= 2246.28 F.F.E.= 2247.28

F.P.E.= 2246.70 F.F.E.= 2247.70

F.P.E.= 2246.80 F.F.E.= 2247.80

F.P.E.= 2247.58 F.F.E.= 2248.58

F.P.E.= 2248.20 F.F.E.= 2249.20

F.P.E.= 2249.56 F.F.E.= 2250.56

F.P.E.= 2250.96 F.F.E.= 2251.96

F.P.E.= 2252.30 F.F.E.= 2253.30

F.P.E.= 2253.56 F.F.E.= 2254.56

F.P.E.= 2253.66 F.F.E.= 2254.66

F.P.E.= 2254.72 F.F.E.= 2255.72

F.P.E.= 2255.35 F.F.E.= 2256.35

F.P.E.= 2256.02 F.F.E.= 2257.02

(1) DITCH BOTTOM INLET
R.E. 2256.69
I.E. 2251.69 SW

(2) DITCH BOTTOM INLET
R.E. 2256.69
I.E. 2251.43 NE, NW

(3) OUTFALL (SEE DETAIL)
I.E. 2248.00

(4) DITCH BOTTOM INLET
R.E. 2249.55
I.E. 2244.55 SW

(5) DITCH BOTTOM INLET
R.E. 2249.55
I.E. 2244.42 NE
2244.42 SW

(6) OUTFALL (SEE DETAIL)
I.E. 2244.25

(7) DITCH BOTTOM INLET
R.E. 2243.12
I.E. 2242.62

(8) DITCH BOTTOM INLET
R.E. 2243.12
I.E. 2241.33

(9) OUTFALL (SEE DETAIL)
I.E. 2236.00

(10) DITCH BOTTOM INLET
R.E. 2238.00
I.E. 2233.00 SW

(11) DITCH BOTTOM INLET
R.E. 2241.25
I.E. 2232.32 NE, SW

(12) DITCH BOTTOM INLET
R.E. 2241.25
I.E. 2232.19 NE, SW

(13) OUTFALL (SEE DETAIL)
I.E. 2231.66

NOTES:

1. F.P.E. = FINISHED BUILDING PAD ELEVATION
2. F.F.E. = FINISHED FLOOR ELEVATION

NO.	DATE	BY	REVISION	NO.	DATE	BY	REVISION

Designed by: G.H. Date: 5/2013

Drawn by: G.H. Date: 5/2013

Checked by: C.J.B. Date: 5/2013

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Engineer of Record:

Registered Engineer Number:

Date: 08/07/2013

DRAINAGE SYSTEM AND GRADING PLAN

BLACK EAGLE STATES

PANTHER DEVELOPMENT INVESTMENTS, LLC

Project Number: 201307

Sheet Number: 8

LEGEND

STRAW WATTLE

SILT FENCE

NORTH

0 50 100

Feet

1" = 50'

PROPERTY LINE

OPEN SPACE AREA

F.P.E.= 2248.18
F.F.E.= 2249.18

F.P.E.= 2249.72
F.F.E.= 2250.72

F.P.E.= 2251.02
F.F.E.= 2252.02

F.P.E.= 2241.75
F.F.E.= 2242.75

F.P.E.= 2238.27
F.F.E.= 2239.27

F.P.E.= 2252.35
F.F.E.= 2253.35

F.P.E.= 2252.70
F.F.E.= 2253.70

F.P.E.= 2251.20
F.F.E.= 2252.20

F.P.E.= 2249.72
F.F.E.= 2250.72

F.P.E.= 2248.70
F.F.E.= 2249.70

F.P.E.= 2235.95
F.F.E.= 2236.95

F.P.E.= 2234.85
F.F.E.= 2235.85

F.P.E.= 2239.27
F.F.E.= 2240.27

F.P.E.= 2252.07
F.F.E.= 2253.07

F.P.E.= 2252.86
F.F.E.= 2253.86

F.P.E.= 2236.20
F.F.E.= 2237.20

F.P.E.= 2233.47
F.F.E.= 2234.47

F.P.E.= 2233.25
F.F.E.= 2234.25

F.P.E.= 2231.81
F.F.E.= 2232.82

F.P.E.= 2245.88
F.F.E.= 2246.88

F.P.E.= 2229.37
F.F.E.= 2230.37

F.P.E.= 2229.92
F.F.E.= 2230.92

F.P.E.= 2244.36
F.F.E.= 2245.36

F.P.E.= 2227.15
F.F.E.= 2228.15

F.P.E.= 2227.67
F.F.E.= 2228.67

F.P.E.= 2229.02
F.F.E.= 2230.02

F.P.E.= 2227.85
F.F.E.= 2228.85

F.P.E.= 2229.72
F.F.E.= 2230.72

PROP. 42"-24" RCP AT 0.30%

PROP. 85'-24" RCP AT 0.30%

PROP. 225'-24" RCP AT 0.30%

PROP. 155'-24" RCP AT 0.30%

PROP. 170'-24" RCP AT 0.30%

PROP. 50'-24" RCP

PROP. 10' UTILITY EASEMENT (TYP.)

LOT LINE (TYP.)

SWALE ℄

PHASE ONE

PHASE TWO

CONNECT AND MATCH EXIST. DIRTY ROAD ELEV.

Storm Sewer Not Constructed

MATCHLINE REFER TO SHEET 8

NOTES:

1. F.P.E. = FINISH BUILDING PAD ELEVATION
2. F.F.E. = FINISH FLOOR ELEVATION

(14) DITCH BOTTOM INLET
R.E. 2242.50
I.E. 2237.50

(15) DITCH BOTTOM INLET
R.E. 2242.50
I.E. 2237.37

(16) OUTFALL (SEE DETAIL)
I.E. 2237.00

(17) DITCH BOTTOM INLET
R.E. 2233.60
I.E. 2228.60 SW

(18) DITCH BOTTOM INLET
R.E. 2233.60
I.E. 2228.47 NE, SW

(19) OUTFALL (SEE DETAIL)
I.E. 2214.00

(20) DITCH BOTTOM INLET
R.E. 2224.00
I.E. 2218.00 SW

(21) DITCH BOTTOM INLET
R.E. 2228.35
I.E. 2217.53 NW, SE

(22) DITCH BOTTOM INLET
R.E. 2228.35
I.E. 2217.38 NW, SE

(23) OUTFALL (SEE DETAIL)
I.E. 2217.00

NO.	DATE	BY	REVISION	NO.	DATE	BY	REVISION

Designed by: G.H. Date: 5/2013
Drawn by: G.H. Date: 5/2013
Checked by: C.J.B. Date: 5/2013

development consulting group
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DRAINAGE SYSTEM AND GRADING PLAN

BLACK EAGLE STATES

PANTHER DEVELOPMENT INVESTMENTS, LLC

Project Number: 201307

Sheet Number: 9